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ABSTRACT

Pragmatic epistemology of focal teacher thinking appears tightly shaped by modular connections between task domains and pragmatic organizers. Discussions with a group of language teachers identified four domains of tasks: (1) oral activities; (2) writing activities; (3) reading activities; and (4) language technique activities (grammar, spelling). Three pragmatic functions are noted: the narrative pragmatic function, which transforms curricular knowledge into themes and images; the instrumental pragmatic function, which organizes curricular intentions in terms of skills, operations, and procedures that could be transferred from one domain to another; and the experiential pragmatic function which transforms curriculum knowledge into global actions, interactions, and actualized experiences. These three pragmatic functions of focal teacher thinking, spontaneously developed in teachers' epistemology, seem to be ways of motivating students. An excerpt from an interview with one teacher is presented and analyzed to demonstrate its pragmatic epistemology. (JD)

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In this paper, I shall start by defining teaching in a semiotic perspective (Eco & al., 1988; Smith, 1989; Tochon, 1989, 1990a and b), indicating its components in their relation to time and intentions. Saussurian semiotics (1915) distinguishes diachrony as a phylogenetic or evolutionary vector which can be cut in the present state of synchrony. These two axes seem to have some correspondance with teaching, insofar as curricular subject-matter seems always directed in the evolutionary direction of time. Like a continuous anticipation of present conscious interactions, awareness of contents appears to be running after interaction, unable to represent its fullness. Two words seem to describe adequately these two vectors: didactics and pedagogy. Didactics is closely related to specific disciplines and curricula but, in its essence, it first shapes matter in a direction of knowledge transmission through time. The essential nature of didactics would be diachronic and representional. In this regard, pedagogy would be live immediacy. Indeed, live relationships to knowledge give no time to think on action: present focalization in action seems to be arational (among experts, at least -Dreyfus & Dreyfus, 1988; Smith, 1988) and partially arepresentational. Everything in live relations is not snapped up: things go too fast in present synchrony. Axis of reflection-on-action produces knowledge at a slow pace compared to immediate reflection-in-action (Munby, 1989). In other terms, curricular knowledge, which is a quite new field of interest (Doyle, 1990) can be defined as a didactic mediatization of knowledge. Didactic means it represents contents and these contents form an intermediate between the live flow of teachers awareness in practice and the immediacy of students relationships. Diachronic contents would be an "in-between" between two present synchronies, one before, one after. Synchrony would be the seat of practice, diachrony would be the seat of theorizing.

Let me give an example of that phenomenon. When you play at chess, there is a time for moving the queen, and there is a time for thinking of the results. Thinking will be done in terms of rules and knowledge organization, I mean representations. But the moment you act seems to have specific representational features, your intentions

become a reality. This reality, in turn, can show you that your representations were false, or that the pieces you were planning to move are in fact the wrong ones. Of course, life is different from a chess game. You do not know all the rules and the rules can vary while you are playing.

Moreover teachers behave as rule-generators: their intentionality becomes the norm. Their representations shape curriculum (Connelly & Clandinin, 1988), they mould others' representations of matter, so they have metarepresentational features. We come to our last definition of didactics: it appears as a contents' diachronic metarepresentation.

As sociolinguists and psycholinguists discovered, there is a time/space where synchrony and diachrony overlap. Regarding teaching, I would consider the semio-cognitive focalising of teaching as such a dynamic time/space, compared to static representations of preaction and postaction. Both theory and practice would strategically merge in one focal reality.

Focal teacher thinking then appears as a paradoxical mystery: how to speak while thinking of the next intended steps? Evolutionary hermeneutics and studies of flow in consciousness seem to have some answers (Csikszentmihalyi & Selega-Csikszentmihalyi, 1988; Csikszentmihalyi & Rathunde, 1990); but we deal here with ricular knowledge transformation, while planning disappears in focal consciousness.

Planning is one term of the paradox. Do good teachers plan or do they improvise in an harmonious affectivo-cognitive move (Yinger, 1987; Clark, 1989)? Are both affective and cognitive models compatible? At least might we note that paper curriculum and written didactics are the tip of the iceberg of planification. A plan being a future on the way to actualization could be just an intention. Paper realities of goal-directed designs would be the rigid surface expressions of deeper modes of transforming knowledge, of intentionality moulding.

Hence pragmatics. Intentions would affectively shape cognitions, would act as a unifying factor of motivation and meaning. Through intentions, cognitions would meet affective knowledge. In focal practice, both definitions of pragmatics would join together in a live intention: where speech becomes action, eclectism is not far.

In summary, I presented in these short introductory notes a whole epistemology of pragmatics. Teachers' thinking seems partially predetermined by contents and representations which are actualized when both sides of the teaching double agenda merge (Leindhardt, 1986). At their junction point, didactics and pedagogy are fused in focal intentions. Explicit knowledge of didactic cognitions and implicit affective knowledge of the context become one in the pragmatic way of knowing of the teacher. In other words, I am basing here pragmatic epistemology on focal teacher thinking.

Research framework

Even live research gives paper results. A focal descriptive of live teaching could only result in didactics (which in turn could be reactualized by teachers). The paradoxical difficulty is to shape focal epistemology in a framework which would not be too far from field focal.

Usual cognitive frameworks isolate nodes and links of semantic structures in the verbalized thoughts of people studied. But studying focal teacher thinking means being involved with intentions in a semio-cognitive framing. In pragmatic linguistics, for example, Fauconnier (1988) defines departure and arrival domains of intentions. His descriptions transcend semantics and deal with intentions or affective implicits. This way, I tried to discover whether or not Language Arts curricular knowledge transformation was shaped by pragmatic organizers.

With that purpose, I had to determine in a preinquiry phase what tasks domains expert Language Arts teachers were using and which kinds of connectors were linking these domains. Then came the question of intentionality: it was difficult to figure out patterns or intentionality functions of teaching in the population studied. To be brief, in light of the relevant questions developped in Tochon (1989, 1990a,b,c), I will mention the results of the preinquiry, which were used for corpus coding processes in the inquiry phase itself.

Domains of tasks have been specified: oral activities, writing activities, reading activities and language technique activities (grammar, spelling) are the four domains of tasks verbalized by the group of teachers I studied. I noted three pragmatic functions: 1) The narrative pragmatic function which transforms curricular knowledge in stories, in themes and images, this way of transmitting knowledge being to affectively mould it in narratives (these results converge with those of Clandinin & Connelly, 1987, 1988, and 1989; Gudmundsdottir, 1990; Shulman, 1990; Tobin, 1990). 2) The instrumental pragmatic function which organizes curricular intentions in terms of skills, operations and procedures which could be transfered from a domain to another. 3) The experiential pragmatic function which transforms curriculum knowledge into global actions, interactions and actualized experiences. These three pragmatic functions of focal teacher thinking seem to be ways of motivating students (as teachers verbalized) spontaneously developed in teachers' epistemology. I named these functions in terms of knowledge **organizers** so as to codify their occurences in the corpus of inquiry. 1) The narrative organizers were named "*narrativors*" as they shape knowledge in narrative intentions. 2) I named the instrumental organizers "*skillers*" for they intend to "skill" students. 3) "*Actualizers*" was the name of the experiential organizers moulding curricular knowledge into experiential intentions. As for **connections**, there were "horizontal" links between tasks domains and "vertical" links between functions which could be embedded. "Alternation" connectors were chronologically weaving horizontal and vertical links in a rhythm of alternate patterns of connections between domains

and/or functions.

To summarize, my framework of research was a semio-cognitive one. The methodology of pragmatic epistemology was defined by looking for metaconcepts of the curriculum in teachers' thoughts, their domains, their links or connectors, and their pragmatic organizers. I repertoried three levels of teachers' intentionality: narrative, instrumental and experiential, respectively organized in narrativors, skillers and actualizers. This (meta)framework of research once specified, there remained the gathering of a corpus of curricular knowledge transformations.

Subjects

The role of experts in the definition of subject-matter is acknowledged by cognitive research. In order to study the pragmatic epistemology of teaching, I selected a sample group of expert teachers in Language Arts at the junior high level in Geneva (Switzerland). A set of composite criteria for selecting 30 expert teachers was established (Tochon, 1990d): high recommendation by some teacher educators, academic education, professional education, minimum 7 years of teaching, and finally random selection in order to lower their number to 30.

Methodology

In order to avoid too much theory (long term memory), the inquiry focused on concrete examples of the curricular processing of four objectives belonging to different taxonomical levels of the junior high curriculum in Geneva. Four objectives were chosen so as to demonstrate their potential for embedding in the strategies verbalized by the teachers. The simulation of planning on these four objectives was then derived from a semi-directive interview related to current experiences of the week during classroom

interaction. Interviews were 110 to 270 minutes long; they were recorded and transcribed *verbatim* for coding and computer analysis. I used different procedures to demonstrate teachers epistemology. The problem was to shed light on the way didactic representation-frames were affected by focal interactions to discover patterns of a **transformational grammar of teachers' knowledge**. Shulman (1990) emphasized the importance of knowledge transformation, but his discourse was still far from operational. The methodology used here in this study might lead to discover entirely new ways of conceiving well-planned improvisation by expert teachers.

I present in this paper an excerpt of an interview (teacher 29) so as to demonstrate its pragmatic epistemology. Full results and methodology are presented in Tochon (1990c).

Excerpt - Teacher 29

I had planned to give back the grades for students' files. I also had a text with questions, and also in my briefcase, one never knows, just in case, two previous summaries students had written on chapters of a book. I mean... students have made summaries, 15 days ago, during two classes, and... I had to grade them but I decided not to, but to take theses summaries back and make them merge in one piece of 150 words, so as to grow in this abstract skill before I grade it in a normative way. So, all that in my briefcase, just in case, but I did not think I would use it. And then, I had a text on the field of the provincial common tests to come, with concrete examples for each point, for each item of this test which comes in a month about. Eventually, I had a newspaper article on the evils of credit cards, addicts to credit cards, to provoke a debate and argument. I did not know how I would use it. I had all that in my briefcase and, also, things I had typed in a hurry, 20 minutes before the class starts, just thinking, well, so I have one more text which seems pretty interesting I could use. Things I had typed perhaps 15 minutes before class, but within my mind two-three days thinking about it from time to time, driving the car or anywhere else.

Then I arrived in the classroom where the students were... very very restless, choppy and rough. It was on Wednesday afternoon; they are very troubled for a few weeks on Wednesday afternoon. In class, I opened my file, to give their grades. All students' grades are in my register. I just became aware I had given very few grades on spelling. Previous grades of spelling were for formative free-gifts (it stimulates them, when they practice writing long texts for themselves, I give them an "A" grade as a free-gift, after a few texts).

In fact, the text I wanted to use... while arriving at the teachers' room, the photocopier did not work. So I could not photocopy the text before going into class. I arrived with a text of no use. I could not use it in the way I wanted, I did not have copies to distribute. Such things happen often.

My plan was during the first hour (I had two classes) to give the text and answer the questions together. To show its difficulties and give it as homework for Saturday. That, I thought would last about 20 minutes, a small half of the first hour, and the following 25 minutes I wanted to summarize both previous

summaries in one piece. The second hour in class would be reading and thinking on the book which I would comment, the book we were reading at that time.

In fact, what happend with these plans? I had no copies, so I could not do what I wanted with the text. Then, as far as reading was concerned, for I immediately thought I could use the book reading and have time to copy the text on stars system during the break between the two classes, but students told me: "When do we stop with that book, Zazie in the subway?" Zazie works usually quite well with students with an extended vocabulary but they should like second degree humor; as these students did not seem matured enough, they took everything on first meaning, which was not exciting nor funny at all.

After 3-4 classes with summaries on chapters of "Zazie in the subway" (the book of Quenault), they say "we want a break, stop with Zazie, we are fed up with that book, stop it we do not want it anymore". In these conditions, I had not much choice. Or pursue Zazie and have the class disagree, or temper their mood, or accept the situation and find another book.

Analysis

Even well planned, the beginning of a class can look like this one. This teacher reports retrospective plans and their actualizing for two lessons. Field contingences and students reactions provoked a strategic derivation of plans while they were contextualized. Here is the context he describes, in short.

That Wednesday afternoon (the day before the interview) students were restless and the photocopier was not functioning. He could not distribute the texts he wanted to use. On opening his grades register, he remembered he had not given spelling grades for some time but "free-gifts grades".

The planning of the first class was to give the text and answer orally to group questions, indicate difficulties then give the questions as homework for the Saturday. The second part of the first class was to be an abstract writing exercise, the summarizing of two previous chapters' abstracts. For the second class, teacher 29 had planned a reflective reading with thinking aloud comments on "Zazie", then open explanation and oral reading of provincial test field.

In fact, events happend brusquely as soon as he entered the classroom. He reports junior high pupils rudely asked to change "Zazie" for another book. He had no copies to give and there was no possibility of giving his course as planned, which seems to happen often. All activities were planned in terms of Zazie's book and the newspaper text he could not photocopy.

To get out of trouble and have time to reflect, to calm down the students, that teacher asked them to take a sheet of paper to write down the text under dictation, with the help of their dictionaries. They had had no dictation for 6 weeks and this one "was only a pretext for looking at new words and meanings, it allowed a quieter text assimilation". He dictated the text which was on stars system and youth idols, previously planned for reading and oral debate (he had another text on credit cards in reserve).

This process of tasks domains derivation can be translated as:

ORAL (narrativor of reading) ----> WRITING (skiller of language technique)

abbreviated as

O(naR ---> W(skT

The text support is the same, but the modification seems radical. Thematic reading in view of a debate becomes a technical exercise, writing through dictation. Debate on that reading is postponed.

In the notation above, the departure tasks domain appears on the right (R for reading) when arrival tasks domain is on the left (O for Oral); the pragmatic organizer shaping the depart domain is in-between and is followed (from right to left) by bracketing; bracketing means vertical embedding connection. The arrow indicates a transformation from plan to actualization.

Pupils had been told the grading scale for spelling dictation would be strict. When the pupils calmed down, teacher 29 proposed that they exchange their copies for peer-grading of the neighbour's copy, applying the grading scale they were told about. He considered grades as indicative and asked students to prepare the text for the next week. The 14 questions on the text he had typed 20 minutes before class would be associated to dictation, the next week, as a "free-gift" supplement if answers were correct.

In a short negociation, the teacher authorized two students to keep the book of Zazie as they were excited about it, while the others gave the book back. He reports the enthusiasm caused by these prompt decisions and the dictations with peer grading produced two useful classes. Such initiatives were undertaken only as far as "he had got a bite". Students then worked well after a choppy beginning. This teacher expressed the feeling that the smooth working atmosphere was a direct result of the spontaneous transformations of his plans. He puts much emphasis on working with pleasure, for the students as well as for himself. He could have used the text for other purposes: as a memory challenge, as a debate motivation after its oral reading, but the choice seemed dictated by events: he had to find a peaceful and restraining activity.

While teacher 29 improvises, ideas connect themselves, things hang together, are provoked by environment and respond to pupils joining their subjective needs to the objective needs of the curriculum.

> *"There is always a balance. I know I respond at best to pupils needs and to the program by reducing entropy, dispensing minimal energy for maximum results (...) Indeed, it is only on arriving in front of my students that I know how I shall use the text and how the class will follow."*

Plan transformations, for these two classes, were the following:

1) The book which was to have kept the students busy for a lesson has been abandoned but for two pupils who kept it two weeks as personal reading;

2) Summaries were not used for writing but individual cases were discussed orally and then kept in briefcase for a next class, just in case;

3) Text analysis, thinking aloud did not happen, but the text on stars was used as a pretext for dictation and as a peer-correcting exercise;

4) A part planned for half-a-lesson in length took one and a half classes;

5) Homework has been modified.

Texts seem to have a functional polyvalence in Language Arts, regulated by balancing of tasks domains.

> *"If I used too much writing, I lead class to reading or to oral activities... A same text is multivalent and can be used in many ways I interiorized through practice (but I try to innovate all along)."*

In that process is revealed pragmatic epistemology of focal teacher thinking. Intentions formalize tasks domains' moves, connections between curricular nodes responding to adaptive contexts. It is as if pragmatic organizers and context focal disorganizers were polarized. Such focal teaching disorganizers are evidenced in the interview of teacher 29, when comparing his plans to their actualizing.

Plans	Actualization
-Individual reading then oral answer to question	-Written dictation then correcting peer-dialogue
-Written summary from two previous abstracts	-No written summary, oral debate on previous abstract and individual case analysis
-Reading of "Zazie in the subway (Quenault) with thinking aloud comments	-Reading dropped, negociating next reading
-Provincial common test preparation oral reading with the whole group	-Individual silent reading of common test field, oral explanation and revising on black board
-Stars text questions for homework.	-Stars text spelling for homework.

Anticipative statics of organizers	Focal dynamics of disorganizers	Resultant statics
READING (narrativor(stars text))	---> A --->	WRITING (skiller(stars text))
ORAL (skiller(questions))	---> B --->	ORAL (skiller(correction))
WRITING (skiller(abstracts))	---> C --->	ORAL HC READING (narrativor-(abstracts))*
READING (narrativor(Zazie))	---> D --->	ORAL (actualizer(negociate)) VC READING (narrativor (undetermined))*
ORAL (narrativor(common test)) VC READING (skiller(guidelines))	---> E --->	READING (skiller(guidelines)) HC ORAL(narrativor(explanations))*

*HC = Horizontal connector between tasks domains.
*VC = Vertical connector between tasks domains and/or pragmatic organizers.

Focal dynamics of disorganizers {A to E} can be retraced from their effects on teacher's improvisation, as retrospectively verbalized.

Suppose a dynamics in which are represented:

T = <tasks domains> = <T1,T2,T3> R = <organizers> = <R1,R2,R3>
{x;y;z} = <contents or material> R1= <narrativor>
T1 = <READING> R2 = <skiller>
T2 = <WRITING> R3 = <actualizer>
T3 = <ORAL>
F = <disorganizers> = <A,B,C,D,E>

I will try hereafter to define F(x), that is focal disorganization functions for A,B,C,D,E, so as to examine knowledge transformation in teachers' thinking.

A(x) =	T1R1(x)	--->	T2R2(x)
B(x) =	T3R2(x)	--->	T3R2(y)
C(x) =	T2R2(x)	--->	T3+T1(R1(x))
D(x) =	T1R1(x)	--->	$\frac{T3R3(y)}{T1R1(z)}$
E(x) =	$\frac{T3R1(y)}{T1R2(x)}$	--->	T1R2(x)+T3R1(z)

Before any attempt at defining specific rules of a pragmatic transformational grammar of Language Arts teacher thinking, it seems interesting to discover from the above algebra that conservative patterns are preserved while focal time/space involves quite

radical moves as far as pragmatic organizers, tasks domains and material are concerned.

The usual transformation in focal pragmatics as reported by the group of teachers I studied is to change the processing tasks domain or the pragmatic organizer. The same text would be used for READING or ORAL, in an instrumental or in a narrative way, or it could lead to a global actualizer. It happens also that the pragmatic structure stays unchanged while the material has been criss-crossed.

Discussion

Two dimensions of teaching appear in the excerpt analyzed. The first one is a static, declarative representation of didactics. The second involves dynamic proceduralization through pedagogical relationships. At a certain junction point, expert teacher focalization is such that didactic patterns are preserved while pedagogy dominates.

Contents are shaped through contextual constraints and their pragmatic potential is activated. Language Arts teachers seem to process curricular nodes through intentionalized text materials. The way they process curriculum knowledge appears to obey three pragmatic functions evidenced in the corpus: narrative, instrumental, or experiential transformation of knowledge (of which demonstration appears in Tochon, 1990a and c). These organizers of teaching intentionality seem to be confronted by focal disorganizing dynamics. Disorganizers could be the resultant of the null organizers of the null (mental) curriculum (Eisner, 1979), each organizational pattern of knowledge being linked in a polar way to its complementary unknown shadow disorganizing effect.

In short, this analysis shows tasks domain mobility and flexibility of pragmatic

organization in the focal phase of plans actualization. Field content actualizing can lead to domains derivation (oral becomes writing, reading is transfered to debate, and so on). The order of items can be interverted, criss-crossed. Some peripheral items dominate suddenly while important items are quickly dropped. Usual modes of teacher planning prescribed in teacher education are rigid compared to expert focal flexibility which seems to maintain harmony and balance as well as filling objective curricular needs.

Pragmatic epistemology of focal teacher thinking appears tightly shaped by modular connections between tasks domains and pragmatic organizers. A teacher's way of knowing expresses itself in intentionality transformations which could be demonstrated by a pragmatic grammar.

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